

Before the  
Federal Communications Commission  
Washington, D.C. 20554

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In the Matter of	)	
	)	
Review of the Commission's Rules Regarding	)	
the Pricing of Unbundled Network Elements	)	WC Docket No. 03-173
and the Resale of Service by Incumbent Local	)	
Exchange Carriers	)	
	)	
	)	
	)	

### NOTICE OF PROPOSED RULEMAKING

**Adopted:** September 10, 2003

**Released:** September 15, 2003

**Comment Date:** 60 days after Federal Register publication of this Notice

**Reply Comment Date:** 105 days after Federal Register publication of this Notice

By the Commission: Chairman Powell, Commissioners Abernathy, Martin, and Adelstein issuing separate statements; Commissioner Copps approving in part, dissenting in part, and issuing a separate statement.

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## I. INTRODUCTION

1. In this Notice of Proposed Rulemaking (NPRM), the Commission begins its first comprehensive review of the rules applicable to the pricing of unbundled network elements (UNEs) pursuant to section 252(d)(1) of the Communications Act of 1934 (the "Act"), as amended by the Telecommunications Act of 1996 (the "1996 Act"). The Commission adopted

its current UNE pricing rules, which base UNE prices on the Total Element Long Run Incremental Cost (TELRIC) of a UNE, in 1996 in the *Local Competition Order*.<sup>1</sup> The Commission stated at that time that it would continue to review its pricing rules based on the results of state arbitration proceedings and provide additional guidance as necessary.<sup>2</sup> We have not undertaken a comprehensive review of the TELRIC methodology in the seven years since it was adopted, and it is appropriate to conduct such a review at this time.

2. Our concerns in evaluating the TELRIC pricing rules are somewhat different than those present at the time the Commission adopted its *Local Competition Order*. At that time, local competition was largely a theoretical exercise and we placed a premium on the need to stimulate entry into the local exchange market. To ensure that UNE prices provided appropriate economic signals for competitive and investment purposes, we adopted a forward-looking cost methodology that calculates the cost today of building and operating an efficient facility, as opposed to the cost of an existing facility at the time it was built.<sup>3</sup> In stating that forward-looking costs were intended to send appropriate economic signals, we mean that UNE prices in excess of forward-looking costs would encourage competitors to build facilities when the more efficient course might be to lease facilities from the incumbent LEC, while prices below forward-looking costs might encourage them to rely on the incumbent's facilities when the more efficient course might be to construct their own facilities. At the same time, we anticipated that UNE prices based on forward-looking costs also would not discourage investment by incumbent LECs because such prices would allow them to recover their costs.

3. Today, now that competition has taken root in many areas of the country, we initiate this proceeding to consider whether our pricing methodology is working as intended and, in particular, whether it is conducive to efficient facilities investment. To the extent that the application of our TELRIC pricing rules distorts our intended pricing signals by understating forward-looking costs, it can thwart one of the central purposes of the Act: the promotion of facilities-based competition. While our UNE pricing rules must produce rates that are just, reasonable and nondiscriminatory, consistent with the Act's goal of promoting sustainable competition, they should not create incentives for carriers to avoid investment in facilities.<sup>4</sup>

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<sup>1</sup> *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15499 (1996) (*Local Competition Order*), *aff'd in part and vacated in part sub nom. Comp. Tel. Assoc. v. FCC*, 117 F.3d 1068 (8<sup>th</sup> Cir. 1997) and *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8<sup>th</sup> Cir. 1997), *aff'd in part and remanded, AT&T v. Iowa Utils. Bd.*, 525 U.S. 366 (1999); *on remand Iowa Utils. Bd. v. FCC*, 219 F.3d 744 (8<sup>th</sup> Cir. 2000) (*Iowa Utilities II*), *reversed in part sub nom. Verizon Communications, Inc. v. FCC*, 535 U.S. 467 (2002) (*Verizon v. FCC*).

<sup>2</sup> *Local Competition Order*, 11 FCC Rcd at 15813, para. 620.

<sup>3</sup> *Id.* at 15844, para. 672 ("We believe the prices that potential entrants pay for these elements should reflect forward-looking costs in order to encourage efficient levels of investment and entry.").

<sup>4</sup> See, e.g., *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, CC Docket No. 01-338, FCC 03-36, para. 682 (released Aug. 21, 2003) (*Triennial Review Order*) ("Establishing UNE prices based on an unreasonably low cost of capital would discourage competitive LECs from investing in their own facilities and thus slow the development of facilities-based competition."). The Supreme Court found that competitive LECs had invested \$55 billion from 1996-2000 and that "a regulatory scheme that can boast such substantial competitive capital spending

4. This NPRM solicits comment on tentative conclusions and modifications to our current UNE pricing regime that seek to preserve its forward-looking emphasis and its pro-competitive purposes, while at the same time making it more transparent and theoretically sound. Specifically, we propose to simplify TELRIC pricing, while simultaneously improving the accuracy of its pricing signals, by resolving one of the key internal tensions that marks its current application: the assumption that for some purposes rates should reflect a market with widespread facilities-based competition but, for other purposes, rates should reflect a market with a single dominant carrier. We seek comment on an approach that bases UNE prices on a cost inquiry that is more firmly rooted in the real-world attributes of the existing network, rather than the speculative attributes of a purely hypothetical network.

5. The Supreme Court in *Verizon v. FCC* affirmed our choice of TELRIC as a permissible methodology for states to use in ratemaking proceedings.<sup>5</sup> The court held that the Commission's decision to adopt a forward-looking cost methodology was a reasonable interpretation of the statute and that the Commission did not err in rejecting alternative methodologies advocated by the incumbent LECs.<sup>6</sup> The court also rejected arguments that various aspects of the TELRIC methodology were unlawful.<sup>7</sup> Nevertheless, the TELRIC rules have proven to take a great deal of time and effort to implement, and have been the subject of extensive criticism. In particular, critics argue that the TELRIC methodology is flawed due to an alleged emphasis on unrealistic efficiency assumptions. They contend that these unrealistic assumptions result in rates that are so far below an incumbent LEC's "actual" costs that neither incumbent LECs nor competitive LECs have an incentive to invest in new facilities.<sup>8</sup>

6. Since 1996, virtually all states have conducted at least one round of cost proceedings under these rules. State pricing proceedings under the TELRIC regime have been extremely complicated and often last for two or three years at a time.<sup>9</sup> State commissions

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over a 4-year period is not easily described as an unreasonable way to promote competitive investment." *Verizon v. FCC*, 535 U.S. at 517. As of 2002, that figure had increased to \$71 billion. See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket Nos. 02-33, 01-318, 01-321, Letter from Jonathan Askin, General Counsel, Association for Local Telecommunications Services, to Marlene H. Dortch, Secretary, FCC, Attach. at 11 (filed July 17, 2003). As one court of appeals has noted, however, "the existence of investment of a specified level tells us little or nothing about incentive effects. The question is how such investment compares with what would have occurred" under a different regulatory regime. *United States Telecom Ass'n v. FCC*, 290 F.3d 415, 425 (D.C. Cir. 2002).

<sup>5</sup> *Verizon v. FCC*, 535 U.S. at 497-529.

<sup>6</sup> *Id.* at 507-08 ("Having considered the proffered alternatives and the reasons the FCC gave for rejecting them, we cannot say that the FCC acted unreasonably in picking TELRIC to promote the mandated competition.").

<sup>7</sup> *Id.* at 523.

<sup>8</sup> See *infra* notes 98 and 100.

<sup>9</sup> See, e.g., *Application by Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks, Inc., and Verizon Select Services, Inc., for Authorization to Provide In-Region, InterLATA Services in Rhode Island*, CC Docket No. 01-324, Memorandum Opinion and Order, 17 FCC Rcd 3300, 3312-15, paras. 21-26 (2002) (*Verizon Rhode Island 271 Order*) (Rhode Island Public Utilities Commission conducted a four-year series of proceedings to establish UNE rates); *Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth*

typically are presented with at least two conflicting cost models, and hundreds of inputs to those models, all supported by the testimony of expert witnesses. These cases are extremely complex, as state commissions must make dozens of detailed decisions regarding the calculation of the forward-looking cost of building a local telecommunications network. The drain on resources for the state commissions and interested parties can be tremendous. We also note that, for any given carrier, there may be significant differences in rates from state to state, and even from proceeding to proceeding within a state. We are concerned that such variable results may not reflect genuine cost differences but instead may be the product of the complexity of the issues, the very general nature of our rules, and uncertainty about how to apply those rules. The resulting rates might not, therefore, achieve fully the Commission's goal of sending appropriate economic signals.

7. Part of the difficulty that states and interested parties have encountered springs from the excessively hypothetical nature of the TELRIC inquiry. Because of the general nature of our rules, state commissions have wide latitude in applying the "most efficient technology" standard under the current rules. This creates the potential for a TELRIC proceeding to become a "black box" from which a variety of possible rates may emerge. In the absence of more specific guidance, this can make network modeling opaque and make it difficult to understand how actual UNE rates are derived. The lack of predictability in UNE rates is difficult to reconcile with our desire that UNE prices send correct economic signals. Moreover, these complicated and time-consuming proceedings may work to divert scarce resources from carriers that otherwise would use those resources to compete in local markets.

8. We also request comment in this proceeding on our resale pricing rules. Section 251(c)(4) requires incumbent LECs to "offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers."<sup>10</sup> Section 252(d)(3) of the Act requires that state commissions establish wholesale rates for resold services based on the incumbent LEC's retail rates, "excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier."<sup>11</sup> This section of the Act is independent of section 252(d)(1), which sets forth the pricing standard for UNEs and interconnection.<sup>12</sup> The Commission's resale pricing rules were vacated by the U.S. Court of Appeals for the Eighth

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*Long Distance, Inc., for Authorization to Provide In-Region, InterLATA Services in Florida and Tennessee*, WC Docket No. 02-307, Memorandum Opinion and Order, 17 FCC Rcd 25828, 24840-44, paras. 24-31 (2002) (*BellSouth Florida/Tennessee 271 Order*) (Florida Public Service Commission conducted a two-year proceeding to set UNE rates (for the second time); Tennessee Regulatory Authority established UNE rates over four years in a two-phased proceeding); *Application by Qwest Communications International, Inc. for Authorization to Provide In-Region, InterLATA Services in the States of Colorado, Idaho, Iowa, Montana, Nebraska, North Dakota, Utah, Washington and Wyoming*, WC Docket No. 02-314, Memorandum Opinion and Order, 17 FCC Rcd 26303, 26412-14, paras. 186-190 (2002) (*Qwest 9-State 271 Order*) (Colorado Public Utilities Commission established UNE rates (for the second time) in a 25-month proceeding).

<sup>10</sup> 47 U.S.C. § 251(c)(4).

<sup>11</sup> 47 U.S.C. § 252(d)(3).

<sup>12</sup> Compare 47 U.S.C. §§ 251(c)(4)(A), 252(d)(3) (resale standard) with 47 U.S.C. §§ 251(c)(3), 252(d)(1) (UNE standard).

Circuit in 2000.<sup>13</sup>

9. Our objective in this proceeding is to modify or clarify the Commission's rules in order to help state commissions more easily develop UNE prices and resale discounts that meet the statutory standards established by Congress in section 252(d) and to provide more certainty and consistency in the results of these state proceedings. Based on the wealth of experience that has been developed over the last seven years, we hope to compile a substantial record on a broad range of issues related to UNE pricing and resale discounts. We are particularly interested in the perspective of the state commissions on the successes and failures of our current rules, and the possible modifications that would most help them in fulfilling their important statutory role in setting UNE prices and resale discounts.

## II. BACKGROUND

### A. General Ratemaking Principles

10. "Cost of service" ratemaking methodologies,<sup>14</sup> whether based on forward-looking cost, historical cost, or some other methodology, follow a common approach to estimating recurring monthly charges.<sup>15</sup> Specifically, a recurring rate set in a regulatory ratemaking proceeding generally will be based on the sum of three separate cost components – operating costs, depreciation expense, and return on capital.<sup>16</sup> In addition to recurring rates, regulators generally establish non-recurring charges (NRCs) that allow a carrier to recover the cost of certain labor activities at the time the activity is performed. We discuss each of these components briefly below.

11. Operating Costs. Operating costs are the non-capital costs associated with

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<sup>13</sup> *Iowa Utilities II*, 219 F.3d at 754-756, 765 (vacating rules 47 C.F.R. §§ 51.609, 51.611), *rev'd on other grounds sub nom Verizon v. FCC*, 535 U.S. 1646.

<sup>14</sup> Cost of service ratemaking is different from price caps and other forms of price regulation that adjust prices from one period to the next based on factors other than a carrier's cost of providing service, such as anticipated productivity and inflation.

<sup>15</sup> See *Verizon v. FCC*, 535 U.S. at 487-88 ("The enduring feature of ratesetting from *Smyth v. Ames* to the institution of price caps was the idea that calculating a rate base and then allowing a fair rate of return on it was a sensible way to identify a range of rates that would be just and reasonable to investors and ratepayers."). The Supreme Court recognized that TELRIC essentially follows this same approach, but with a rate base "valued in terms of . . . equipment an incumbent may not own." *Id.* at 501.

<sup>16</sup> ALFRED KAHN, *THE ECONOMICS OF REGULATION, PRINCIPLES AND INSTITUTIONS*, Vol. 1 at 26-27 (1970) (KAHN) (Regulators "need to make determinations about which costs they were prepared to authorize for inclusion in the computed company cost-of-service; and of these, which could be charged directly as operating expenses and thus included in annual revenue requirements dollar for dollar, and which capitalized, thus entering the cost of service in the form of annual allowances for depreciation and return on the undepreciated portion of the investment."); JAMES C. BONBRIGHT, ET AL., *PRINCIPLES OF PUBLIC UTILITY RATES* at 200 (2d ed. 1988) (BONBRIGHT) ("Under the usual forms of regulation, a fair return is the excess in operating revenues over operating expenses for which a commission will make provision in a rate case as a component of the company's annual revenue requirements. The operating expenses include allowances for depreciation and for nearly all taxes, not even excepting corporate income taxes.").

operating a network, including maintenance expense, administrative expense, and an allocation of other common and overhead costs. Under an historical cost methodology, rates are designed to recover all operating costs unless disallowed by the regulator.<sup>17</sup> Under a forward-looking methodology, operating costs may be estimated in a variety of ways. For instance, they may be estimated by multiplying the projected investment by an expense factor, sometimes referred to as an annual charge factor (ACF), which is typically the ratio of current expenses to current investment.<sup>18</sup> Alternatively, expenses may be estimated by applying productivity and inflation factors to a carrier's current expenses.<sup>19</sup>

12. **Depreciation Expense.** Depreciation expense represents an effort to recover the decline in the economic value of capital assets over time.<sup>20</sup> There are various ways to estimate depreciation expense. For example, under straight-line depreciation, the initial capital investment in an asset is divided by its useful life to derive an annual depreciation expense.<sup>21</sup> Economic depreciation, in contrast, is intended to reflect the actual decline in the economic value of a capital asset between one period and the next. The difference between the two is largely one of timing, as both approaches recover the same total investment over the life of the asset. Depreciation expense is difficult to estimate because it requires the regulator to predict the service life of the asset and how its value declines over time. The economic value of a capital asset is likely to decline more quickly if new, more efficient (*i.e.*, more productive or less expensive) capital assets are introduced that would increase the net present value of expected cash flows associated with the new assets. Consequently, to estimate economic depreciation it is necessary to estimate the likely decline in the value of an existing asset that will result from improvements in technology.

13. **Return on Capital.** The return on capital is estimated by multiplying a firm's cost of capital by its investment base. The cost of capital is the cost a firm will incur in raising funds in a competitive capital market.<sup>22</sup> The cost of capital is generally estimated as a weighted average of the cost of equity and the cost of debt. The rate financial markets will demand before they are willing to purchase a particular company's debt or equity will depend on the market's

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<sup>17</sup> CHARLES F. PHILLIPS, JR., *THE REGULATION OF PUBLIC UTILITIES* at 255 (3d ed. 1993) (PHILLIPS) (citing *Mississippi River Fuel Corp. v. Federal Power Comm.*, 163 F. 2d 433, 437 (D.C. Cir. 1947) ("Expenses . . . are facts. They are to be ascertained, not created, by the regulatory authorities. If properly incurred, they must be allowed as part of the composition of rates. Otherwise, the so-called allowance of a return upon investment, being an amount over and above expenses, would be a farce.")).

<sup>18</sup> *Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45, 97-160, Tenth Report and Order, 14 FCC Rcd 20156, 20301-02, 20304, paras 341, 346 (1999) (*USF Inputs Order*), *aff'd sub nom. Qwest Corp. v FCC*, 258 F.3d 1191 (10<sup>th</sup> Cir. 2001).

<sup>19</sup> *Qwest 9-State Order*, 17 FCC Rcd at 26419-20, paras. 202-04 (rejecting argument that a 4 percent reduction in expenses to reflect productivity, net of inflation, was inconsistent with TELRIC requirements).

<sup>20</sup> KAHN at 32 (Depreciation "is an imputed cost, introduced to take account of the fact that the economic life of capital assets is limited; to distribute the decline in their value - which is a genuine cost of production - over their economic life, in order to assure its recoupment from customers").

<sup>21</sup> *Id.* at 117; BONBRIGHT at 276-77.

<sup>22</sup> KAHN at 45.

assessment of that firm's overall risk.<sup>23</sup> As with depreciation, the calculation of the cost of capital is complicated and subject to dispute. One reason that a cost of capital is difficult to calculate is that the calculation depends on an assessment of a particular firm's risk going forward. Regulators, however, generally only have data on the cost of debt and equity that particular firms or groups of firms have experienced in the past.<sup>24</sup>

14. Non-recurring costs. Estimating non-recurring costs and determining how to recover them raise issues different from recurring costs. In the regulatory context, non-recurring costs are one-time costs that a firm incurs in supplying a facility or service to a customer or other carrier. Examples of non-recurring costs include the cost of having a technician turn up (or install) a second line to a customer, the cost of a technician cutting over a loop to a carrier's collocation cage, and the cost of removing load coils so that digital subscriber line (DSL) service can be provided over copper loops. One important characteristic of non-recurring charges is that they generally represent a sunk investment to the customer or carrier that must pay them, and they therefore can constitute a barrier to entry.<sup>25</sup>

## **B. Ratemaking Under the 1996 Act**

### **1. UNE Prices**

15. Under the ratemaking process for UNEs established in the 1996 Act, incumbent LECs and requesting carriers in a given state may negotiate an agreement with respect to UNE prices. The state commission must approve such an agreement unless it is discriminatory or otherwise contrary to the public interest.<sup>26</sup> If parties are unable to agree and an arbitration is necessary, section 252(d)(1) of the Act provides that rates for interconnection and UNEs shall be "based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element" and "may include a reasonable profit."<sup>27</sup> The prohibition on reference to a rate-base/rate-of-return proceeding renders section 252(d)(1) "radically unlike all previous statutes" in that it "appears to be an explicit disavowal of the familiar public utility model of rate regulation."<sup>28</sup>

16. In the *Local Competition Order*, the Commission adopted guidelines to be applied when parties cannot agree and state commissions are called on to arbitrate disputes regarding the prices for interconnection and UNEs pursuant to section 252(d)(1).<sup>29</sup> Specifically, the

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<sup>23</sup> ROGER A. MORIN, *REGULATORY FINANCE, UTILITIES' COST OF CAPITAL* at 20 (1994).

<sup>24</sup> KAHN at 45-46.

<sup>25</sup> *Local Competition Order*, 11 FCC Rcd at 15875-76, para. 749.

<sup>26</sup> 47 U.S.C. § 252(e)(2).

<sup>27</sup> 47 U.S.C. § 252(d)(1).

<sup>28</sup> *Verizon v FCC*, 535 U.S. at 1661.

<sup>29</sup> *Local Competition Order*, 11 FCC Rcd at 15844-56, paras. 672-703. The Commission also concluded that rates for reciprocal compensation under section 252(d)(2) should be based on the same principles. *Id.* at 16023, para. 1054.



Commission adopted a forward-looking economic cost (FLEC) methodology, which it called "Total Element Long Run Incremental Cost" or "TELRIC." TELRIC is based on the assumption that competition would constrain the value of an incumbent LEC network and the price that could be charged for use of that network. In other words, the "cost" of the element for purposes of section 252(d)(1) equals the price that an incumbent LEC would be able to charge for an element in a competitive market.<sup>30</sup>

17. The Commission's TELRIC pricing rules equate the incumbent LEC's cost of providing network elements with the cost today of building a local network that can provide all the services its current network provides, using the least-cost, most-efficient technology currently available.<sup>31</sup> The Commission added one additional constraint on the design of this reconstructed network: the new network must take as given the existing wire center locations.<sup>32</sup> Because of this constraint, the TELRIC methodology adopted by the Commission often is characterized as a "scorched node" approach to costing. In describing this methodology, the Commission stated that regulators should use economic depreciation in calculating depreciation expense, and that they should adjust the cost of capital to reflect the risks faced by the incumbent as competition is introduced into its local market.<sup>33</sup>

18. The TELRIC methodology assumes that the relevant increment of output is all current and reasonably projected future demand, *i.e.*, it is designed to calculate the total cost of building a new, efficient network.<sup>34</sup> UNE prices are then calculated by dividing the total cost for a particular element by the number of units of that element. For example, if the TELRIC of all outside loop plant were \$10 million and the network had one million loops, then the TELRIC of a loop would be \$10. In other words, TELRIC calculates the long-run *average* incremental cost of a network element.

19. In the *Local Competition Order*, the Commission concluded that, as a general rule, rates for unbundled network elements should recover costs in the manner in which they are incurred.<sup>35</sup> The Commission stated that recurring costs should be recovered through recurring charges.<sup>36</sup> The Commission further stated that non-recurring costs could be recovered either through non-recurring charges or recurring charges (provided that the regulated firm did not

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<sup>30</sup> *Id.* at 15846, para. 679 ("Adopting a pricing methodology based on forward-looking economic costs best replicates, to the extent possible, the conditions of a competitive market.").

<sup>31</sup> *Id.* at 15848-49, para. 685; 47 C.F.R. §§ 51.501 - 51.511.

<sup>32</sup> *Local Competition Order*, 11 FCC Rcd at 15848-49, para. 685 (the assumption of existing wire centers "mitigates incumbent LECs' concerns that a forward-looking pricing methodology ignores existing network design, while basing prices on efficient new technology that is compatible with existing infrastructure"); 47 C.F.R. § 51.505(b)(1).

<sup>33</sup> *Local Competition Order*, 11 FCC Rcd at 15856, para. 703.

<sup>34</sup> *Id.* at 15850, para. 690.

<sup>35</sup> *Id.* at 15874, para. 743.

<sup>36</sup> *Id.* at 15874-75, para. 745-48.

recover more than the total forward-looking cost).<sup>37</sup> The Commission's primary focus in the *Local Competition Order* was the calculation of recurring costs. It said little about how a state regulator should provide for recovery of non-recurring costs, although it did require the use of forward-looking costs.

20. The TELRIC rules were the subject of lengthy litigation over both the Commission's jurisdiction to establish them and whether the Commission reasonably interpreted the statute in establishing them. The Supreme Court upheld the Commission's jurisdiction to establish a pricing methodology for UNEs and interconnection in *AT&T v. Iowa Utilities Board*.<sup>38</sup> The court found that section 201(b) of the Act gives the Commission authority to prescribe rules and regulations necessary to carry out the Act, including the local competition provisions in sections 251 and 252.<sup>39</sup> The court stated that this authority is not diminished by the Act's delegation of ratesetting authority to the states under section 252(c)(2).<sup>40</sup>

21. Subsequently, in *Verizon v. FCC*, the Supreme Court affirmed the substance of the Commission's TELRIC rules.<sup>41</sup> As noted above, the court rejected arguments by incumbent LECs that the statute requires a pricing standard that considers historical costs.<sup>42</sup> The court found that the Commission's decision to adopt a forward-looking cost methodology was a reasonable interpretation of the statute.<sup>43</sup> In particular, the court found that the Commission's rules "may provide incentives and opportunities for competitors to build their own network elements" and that competitors had in fact done so in the four years following passage of the 1996 Act.<sup>44</sup> The court also rejected arguments that various aspects of the TELRIC methodology were unlawful, and it found that the constitutional claims advanced by the incumbent LECs were premature in the absence of a challenge to a specific TELRIC-based rate.<sup>45</sup>

22. In the *Triennial Review* proceeding, several parties requested that the Commission clarify or modify the TELRIC methodology.<sup>46</sup> In response, we clarified the existing rules with

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<sup>37</sup> *Id.* at 15875-76, paras. 749-50

<sup>38</sup> *AT&T v. Iowa Utils. Bd.*, 525 U.S. at 378-85.

<sup>39</sup> *Id.* at 378.

<sup>40</sup> *Id.* at 384 ("The FCC's prescription, through rulemaking, of a requisite pricing methodology no more prevents the States from establishing rates than do the statutory 'Pricing standards' set forth in section 252(d).").

<sup>41</sup> *Verizon v. FCC*, 535 U.S. at 523.

<sup>42</sup> *Id.* at 501.

<sup>43</sup> *Id.* at 507-08

<sup>44</sup> *Id.* at 507 ("Inefficiencies built into the scheme may provide incentives and opportunities for competitors to build their own network elements."); *id.* at 516 ("The entrants have presented figures showing that they have invested in new facilities to the tune of \$55 billion since the passage of the Act.").

<sup>45</sup> *Id.* at 523.

<sup>46</sup> Letter from Cronan O'Connell, Vice President - Federal Regulatory, Qwest, to Marlene H. Dortch, Secretary, Federal Communications Commission at 12 (Oct. 28, 2002) (Qwest TELRIC Letter); Letter from Chris Frentrup, Senior Economist, WorldCom, to Ms. Marlene Dortch, Secretary, Federal Communications Commission at 8 (Oct.

respect to two key components of TELRIC – cost of capital and depreciation.<sup>47</sup> The Commission made clear that, in establishing a TELRIC-based cost of capital, state commissions must reflect the risk of participating in a market with facilities-based competition.<sup>48</sup> With respect to depreciation, the Commission declined to mandate a particular set of asset lives. We did, however, clarify that it was appropriate for state commissions to employ accelerated depreciation in order to reflect accurately the anticipated decline in the value of assets in a competitive market.<sup>49</sup>

## 2. Resale

23. Section 252(d)(3) of the Act requires that state commissions establish wholesale rates for resold services based on the incumbent LEC's retail rates, "excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier."<sup>50</sup> As noted above, this section of the Act is independent of section 252(d)(1), which sets forth the cost-based pricing standard for UNEs and interconnection.<sup>51</sup>

24. In the *Local Competition Order*, the Commission adopted a "reasonably avoidable" standard governing the costs that must be considered avoided when calculating the wholesale discount.<sup>52</sup> That is, the Commission found that any costs that "reasonably can be avoided" by the incumbent LEC when it provides a service at resale must be considered avoided in determining the wholesale discount.<sup>53</sup>

25. The Commission's original resale pricing rules were vacated by the Eighth Circuit in *Iowa Utilities II* because the court found that the rules were inconsistent with the plain meaning of the statute.<sup>54</sup> In *Iowa Utilities II*, the Eighth Circuit found that the appropriate standard for determining avoided costs is not those costs that "can be avoided," but rather "those costs that the [incumbent LEC] will actually avoid incurring in the future."<sup>55</sup> Further, the court

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23, 2002); Letter from William M. Daley, President, SBC Communications, Inc., to Hon. Michael K. Powell, Chairman, FCC (Sept. 4, 2002); Letter from James W. Cicconi, General Counsel and Executive Vice President, AT&T, to Honorable Michael Powell, Chairman, Federal Communications Commission, Attach. at 3 (July 26, 2002); Letter from William P. Barr, Executive Vice President and General Counsel, Verizon, to Honorable Michael Powell, Chairman, Federal Communications Commission (July 16, 2002).

<sup>47</sup> *Triennial Review Order* at paras. 675-91.

<sup>48</sup> *Id.* at para. 680.

<sup>49</sup> *Id.* at para. 690.

<sup>50</sup> 47 U.S.C. § 252(d)(3).

<sup>51</sup> *See supra* para. 8.

<sup>52</sup> *Local Competition Order*, 11 FCC Rcd at 15956-15957, para. 912.

<sup>53</sup> 47 C.F.R. § 51.609(b).

<sup>54</sup> *Iowa Utilities II*, 219 F.3d at 754-756, 765.

<sup>55</sup> *Id.* at 755.

explained that, when determining avoided costs, the state commission may not assume that the incumbent is acting as a wholesaler only, but rather must assume that the incumbent provider is acting as both a wholesale and a retail provider.<sup>56</sup> The Commission has not conducted any further rulemaking to provide additional guidance on establishing wholesale discounts.

### C. Review of UNE Prices Under Section 271

26. Pursuant to section 271(d) of the Act, the Commission is responsible for reviewing applications by Bell Operating Companies (BOCs) for authority to provide in-region interLATA services.<sup>57</sup> As part of that review, the Commission considers whether a BOC offers access to UNEs at prices that comply with section 252(d)(1).<sup>58</sup> In reviewing state pricing decisions in the section 271 context, the Commission does not conduct a *de novo* review. Rather, given that the purpose of our section 271 review is to determine whether a BOC has opened its local market to competitors, the Commission determines whether the state has established rates that are within the range that a reasonable application of TELRIC principles would produce.<sup>59</sup>

27. In a number of cases, the Commission found that various aspects of state pricing decisions appeared to be inconsistent with the forward-looking cost principles on which our rules are based.<sup>60</sup> Because an error in one component of a pricing decision does not necessarily mean that UNE prices do not comply with TELRIC, the Commission developed an alternative method, known as benchmarking, by which BOCs can demonstrate that their UNE rates are in the range that TELRIC principles would produce.<sup>61</sup> Under the benchmarking alternative, a BOC can demonstrate that its rates in a particular state, adjusted for known cost differences, are at or below the level of rates in another state in its region that the Commission already has found to be

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<sup>56</sup> *Id.*

<sup>57</sup> 47 U.S.C. § 271(d)

<sup>58</sup> 47 U.S.C. § 271(c)(2)(B)(ii).

<sup>59</sup> See, e.g., *Joint Application by SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, CC Docket No. 00-217, Memorandum Opinion and Order, 16 FCC Rcd 6237, 6266, para. 59 (2001) (*SBC Kansas/Oklahoma 271 Order*), remanded in part sub nom. *Sprint Communications Co. v. FCC*, 271 F.3d 549 (D.C. Cir. 2001).

<sup>60</sup> *SBC Kansas/Oklahoma 271 Order*, 16 FCC Rcd at 6275-76, para. 80; *Application of Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions) and Verizon Global Networks Inc., For Authorization to Provide In-Region, InterLATA Services in Massachusetts*, CC Docket No. 01-9, Memorandum Opinion and Order, 16 FCC Rcd 8988, 9006-07, paras. 38-39 (2001) (*Verizon Massachusetts 271 Order*); *Verizon Rhode Island 271 Order*, 17 FCC Rcd at 3318-19, paras. 34-45.

<sup>61</sup> See, e.g., *Verizon Massachusetts 271 Order*, 16 FCC Rcd at 9006-08, paras. 37, 40; *Verizon Rhode Island 271 Order*, 17 FCC Rcd at 3320-21, paras. 38-40; *Qwest 9-State 271 Order*, 17 FCC Rcd at 25429-30, 26458-60, paras. 228, 280-82.

TELRIC-compliant.<sup>62</sup>

28. Because it is difficult to demonstrate that state pricing decisions fully comply with TELRIC principles during the statutory 90-day review period for section 271 applications, the BOCs have made frequent use of the benchmarking alternative. Indeed, in a number of cases, BOCs reduced rates below the rate established by the state commission in order to satisfy our benchmarking test.<sup>63</sup> Thus, to the extent that errors in applying TELRIC rules may have resulted in inappropriately high UNE rates in some states, the benchmarking process has acted to constrain these rates. The Commission has no comparable process, however, for identifying or correcting rates when an error in applying the TELRIC rules results in rates that are inappropriately low.<sup>64</sup> Although we have addressed some specific cost input disputes as they have arisen in section 271 proceedings, our disposition of those disputes has provided no systematic guidance on pricing issues. We embark on this proceeding to provide states and interested parties comprehensive guidance lacking in our consideration of section 271 applications.

### III. FORWARD-LOOKING METHODOLOGY

29. Before addressing the detailed issues related to UNE pricing, we first must determine whether to alter the Commission's fundamental decision to use a methodology that sets prices on the basis of the forward-looking cost of providing UNEs. Although some incumbent LECs continue to press for UNE rates based on an historical cost methodology, in this proceeding we reaffirm our commitment to forward-looking costing principles. As the Supreme Court has made clear, an approach based on forward-looking cost is an entirely reasonable approach to follow under section 252(d)(1).<sup>65</sup> Below we briefly examine a number of alternative pricing theories, as well as the relative merits of a forward-looking cost methodology.

30. Forward-Looking Cost. A forward-looking costing methodology considers what it would cost today to build and operate an efficient network (or to expand an existing network) that can provide the same services as the incumbent's existing network. The benefit of a forward-looking approach is that it gives potential competitors efficient price signals in deciding whether to invest in their own facilities or to lease the incumbent's facilities. That is, if construction of new facilities by a competitive LEC would cost less than leasing facilities at prices based on FLEC, the efficient result is for the new entrant to build its own facilities.<sup>66</sup>

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<sup>62</sup> Relative cost differences among states are determined by reference to the results of the Synthesis Model that the Commission uses for universal service purposes. See, e.g., *SBC Kansas/Oklahoma 271 Order*, 16 FCC Rcd at 6276-77, paras. 81-84; *Verizon Massachusetts 271 Order*, 16 FCC Rcd at 9007-08, para. 40.

<sup>63</sup> See, e.g., *Qwest 9-State 271 Order*, 17 FCC Rcd at 26431, 26433-34, 26436-37, 26439-40, 26442, 26444-45, 16448, 25451, 26460, paras. 230, 235, 241, 246, 249, 255, 261, 268, 283.

<sup>64</sup> As discussed in paragraph 40 *infra*, the Commission did state in the *Local Competition Order* that it would consider incumbent LEC claims that particular rates were confiscatory.

<sup>65</sup> *Verizon v. FCC*, 535 U.S. at 507-08.

<sup>66</sup> As we discuss in section IV.H *infra*, the effectiveness of FLEC-based UNE prices in signaling whether it is efficient for a carrier to enter a particular market may depend in large part on whether retail rates are cost-based.

Assuming that the modeling method is accurate, a forward-looking cost approach more closely approximates the costs that would exist in a competitive market than does an historical cost approach by revealing potential efficiencies that might not otherwise be apparent.

31. As noted above, the Commission's rules have been criticized for some of the assumptions incorporated into the forward-looking approach adopted in 1996. For example, critics argue that the assumption that new technology will be deployed instantaneously and ubiquitously is unrealistic even in the most competitive markets.<sup>67</sup> We note that these criticisms are directed at the version of forward-looking cost adopted by the Commission, and are not criticisms of forward-looking cost *per se*.<sup>68</sup>

32. Historical cost. Traditional rate-base/rate-of-return ratemaking has generally been based on the use of historical costs, *i.e.*, the costs the regulated firm incurred in building its network and providing service and that it recorded in its books of account. As an initial matter, an historical cost approach is highly dependent on the accuracy of an incumbent LEC's accounting records, which potentially creates a significant information asymmetry that benefits the incumbent LECs. In addition to the problems associated with reliance on incumbent LEC accounting records, the use of historical costs does not necessarily provide efficient investment signals to potential entrants. As many economists have noted, it is forward-looking costs, not historical costs, that are relevant in setting prices in competitive markets.<sup>69</sup> If historical costs are higher than the forward-looking costs an entrant would face, setting rates on the basis of historical cost could result in UNE prices that deter entry generally, or cause entrants to build their own facilities even when it is inefficient to do so. Conversely, if historical costs are lower than forward-looking costs, UNE rates based on historical costs might cause entrants to lease facilities when it was more efficient either to build their own or not to enter a particular market.

33. The Supreme Court found that "the statutory language places a heavy presumption against any method resembling the traditional embedded-cost-of-service model of ratesetting."<sup>70</sup> The court noted that any use of embedded costs would allow LECs to pass on to competitors the results of past inefficiencies, which is at odds with the objective of forcing all

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<sup>67</sup> Alfred E. Kahn, Timothy J. Tardiff and Dennis L. Weisman, *The Telecommunications Act at three years: An economic evaluation of its implementation by the Federal Communications Commission*, 11 Info. and Econ. Policy 319, 326-27 (1999).

<sup>68</sup> *Id.* at 324-25.

<sup>69</sup> *Id.* ("Among economists, there is widespread agreement in principle that (1) the costs that would be the basis for efficient prices would be forward-looking, rather than historical and (2) the prices set on that basis should emulate the ones that would emerge from local exchange competition, if it were feasible."); ARMEN A. ALCHIAN AND WILLIAM R. ALLEN, EXCHANGE AND PRODUCTION at 222 (3d ed. 1983) ("Once [an item] is acquired, [its cost is] irrelevant to the setting of price in competitive markets."); N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS at 291 (1997) ("The irrelevance of sunk costs explains how real businesses make decisions."); PAUL A. SAMUELSON AND WILLIAM D. NORDHAUS, ECONOMICS at 167 (16<sup>th</sup> ed. 1998) ("One of the most important lessons of economics is that you should look at the marginal costs and marginal benefits of decision and ignore past or sunk costs.").

<sup>70</sup> *Verizon v. FCC*, 535 U.S. at 512.

carriers to make efficient choices.<sup>71</sup>

34. Efficient Component Pricing Rule (ECPR). The ECPR posits that interconnection and UNE rates should be based on the incumbent's incremental cost of providing the service, where that incremental cost includes the incumbent's opportunity cost, measured in terms of foregone profits. Advocates of the ECPR claim that this rule most closely parallels the method a firm in a competitive market would employ when faced with the opportunity of selling inputs to firms that intend to compete with it in the final product market.<sup>72</sup> Advocates further claim that the ECPR not only will ensure that the incumbent will be indifferent between selling inputs to a competitor versus selling final products to end-user customers, but that it will also ensure efficient entry.<sup>73</sup>

35. In the *Local Competition Order*, the Commission rejected the ECPR approach. It found that ECPR would discourage competition because it relies on prevailing retail prices (which are not cost-based and may reflect monopoly rents) in setting the rates new entrants pay incumbents for inputs.<sup>74</sup> The Supreme Court agreed that ECPR had flaws similar to a historical cost methodology because the "opportunity cost" of providing the UNE is based on the amount of lost revenue, which in turn is a function of embedded costs, or is not related to cost at all.<sup>75</sup>

36. Ramsey Pricing. The Commission in 1996 also considered and rejected Ramsey pricing, which is a method for allocating common costs among retail services.<sup>76</sup> Under this approach, common costs are allocated among services in inverse proportion to the elasticity of demand for a particular service. The Commission found that Ramsey pricing would raise prices for the most critical bottleneck elements and therefore would undermine the pro-competitive objectives of the 1996 Act.<sup>77</sup> The Supreme Court agreed with the Commission that Ramsey pricing is inconsistent with the Act because rates would be highest for those elements that are most difficult to replicate, thus deterring the competitive entry that is one of the principal goals of the Act.<sup>78</sup>

37. We conclude that our decision remains sound to base UNE prices on the forward-looking cost of providing UNEs. This approach is supported both by the Supreme Court's endorsement of our forward-looking cost methodology and its concerns regarding alternative

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<sup>71</sup> *Id.*

<sup>72</sup> J. Gregory Sidak and Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 Columbia L. Rev. 1081, 1093-94 (1997).

<sup>73</sup> *Id.* at 1098-99.

<sup>74</sup> *Local Competition Order*, 11 FCC Rcd at 15859-60, paras. 709-11.

<sup>75</sup> *Verizon v. FCC*, 535 U.S. at 514.

<sup>76</sup> *Local Competition Order*, 11 FCC Rcd at 15853, para. 696.

<sup>77</sup> *Id.*

<sup>78</sup> *Verizon v. FCC*, 535 U.S. at 515-16.

pricing methodologies that rely in whole or in part on embedded costs. We also note the general absence of criticism showing that a forward-looking costing methodology *per se* is flawed or unreasonable. Accordingly, we decline to open an inquiry into alternative pricing theories. Instead, this NPRM will focus on, and solicit comments regarding, clarifications or modifications of the current FLEC-based rules that will more fully satisfy the Commission's policy goals and the statutory requirements of section 252(d)(1).

#### IV. UNE PRICING

##### A. Overarching Issues

##### 1. Goals of UNE Pricing

38. In the *Local Competition Order*, the Commission found that a UNE pricing regime should achieve two objectives. First, UNE prices should be set in a manner that sends efficient entry and investment signals to all competitors.<sup>79</sup> Second, UNE prices should provide incumbent LECs an opportunity to recover the forward-looking costs of providing UNEs.<sup>80</sup> We ask parties to comment on whether these should remain the primary goals of the Commission's UNE pricing rules. If not, parties should identify alternative pricing goals and explain what circumstances have changed since 1996 that would justify changing the Commission's objectives.

39. Because the Commission designed UNE prices to serve two distinct objectives – providing appropriate economic signals with respect to efficient competitive entry and investment while providing incumbent LECs with the opportunity to recover the forward-looking costs of providing UNEs – determining whether UNE prices for a given carrier in a given state have been set at the “correct” level is an extremely complicated task. With respect to the first objective, we seek comment on how the Commission could measure empirically whether those prices are sending appropriate signals with respect to competitive entry and investment? What should we expect to see in the market if UNE prices are sending correct economic signals? At what speed and over what period of time would we expect entry and investment to occur?

40. With respect to cost recovery, we note that the Commission offered incumbent LECs the opportunity to seek relief from the TELRIC pricing rules if they could demonstrate the rules had been applied to produce confiscatory rates, and the Commission did not foreclose the possibility of establishing a separate mechanism to recover embedded costs not recovered through UNE rates.<sup>81</sup> Does the availability of this relief diminish the need for us to be concerned

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<sup>79</sup> *Local Competition Order*, 11 FCC Rcd at 15844, para. 672 (“We believe that the prices that potential entrants pay for these elements should reflect forward-looking economic costs in order to encourage efficient levels of investment and entry.”)

<sup>80</sup> 47 U.S.C. § 252(d)(1). UNE prices need not, however, provide for full recovery of historical costs. *Local Competition Order*, 11 FCC Rcd at 15857-58, para. 705 (“Neither a methodology that establishes prices for interconnection and access to network elements directly on the costs reflected in the regulated books of account, nor a price based on forward-looking costs plus an additional amount reflecting embedded costs, would be consistent with the approach we are adopting.”).

<sup>81</sup> *Local Competition Order*, 11 FCC Rcd at 15872, para. 739.



with whether UNE rates provide for full cost recovery? In measuring the reasonableness of UNE prices, is a comparison to an incumbent LEC's historical costs relevant? We note in this respect that the Supreme Court called into question whether historical costs were even accurate.<sup>82</sup> Does this criticism undermine our ability to make any kind of reliable comparison? Are there other comparisons that would provide a more useful measure of whether UNE rates are providing an appropriate level of cost recovery?

41. Are there other goals the Commission should consider in establishing a UNE pricing methodology? For example, two goals identified in the universal service context – transparency and verifiability – also may be relevant to a state commission's ability to determine UNE costs in a reasonable time frame.<sup>83</sup> By transparency we mean that the logic and algorithms of a cost study or cost model should be revealed to and understandable by the parties and regulators. For example, if a cost model were presented in an electronic spreadsheet, but all the formulae were concealed so that parties could not ascertain the underlying assumptions, the model would not be transparent. By verifiability we mean that data or inputs that are used to estimate costs should be derived from public sources, or they should be able to be verified or audited without undue cost and delay. We ask parties to comment on the importance of transparency and verifiability. Are these goals as important as the investment and cost recovery goals discussed above? Is there any way for the Commission to measure whether these goals are being achieved?

## 2. Impact of Triennial Review

42. In the *Triennial Review Order*, the Commission made a number of significant changes to the regime for determining what elements must be unbundled by an incumbent LEC. In particular, the Commission adopted a new interpretation of section 251(d)(2) for determining whether requesting telecommunications carriers are entitled to access to an unbundled network element.<sup>84</sup> We seek comment on the relationship, if any, between this new interpretation and the Commission's UNE pricing rules.

43. The unbundling obligations set forth in the *Triennial Review Order* with respect to hybrid fiber/copper loops are limited.<sup>85</sup> What implications does this limitation have for a pricing methodology based on forward-looking costs? The Commission's TELRIC methodology attempts to measure the cost of discrete network elements, rather than that of particular network

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<sup>82</sup> *Verizon v FCC*, 535 U.S. at 512 (“[T]he temptation would remain to overstate book costs to ratemaking commissions and so perpetuate the intractable problems that led to the price-cap innovation.”); *id.* at 1676 (“the ‘book’ value or embedded costs of capital presented to traditional ratemaking bodies often bore little resemblance to the economic value of capital”); *id.* at 518 (“[B]ook costs may be overstated by approximately \$5 billion.” (quoting *FCC Releases Audit Report on RBOCs’ Property Records*, Report No. CC 99-3 (rel. February 25, 1999)).

<sup>83</sup> *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, First Report and Order, 12 FCC Rcd 8776, 8915, para. 250 (1997) (*USF First Report and Order*) (subsequent history omitted).

<sup>84</sup> *Triennial Review Order* at paras. 55-172.

<sup>85</sup> Specifically, incumbent LECs are not required to provide unbundled access to hybrid loops for the provision of packetized broadband services. Incumbent LECs must continue to provide unbundled access to TDM features, functions and capabilities of their hybrid loops. *Id.* at paras. 285-97.

technologies, in order to minimize the difficulties inherent in allocating joint and common costs.<sup>86</sup> Previously, UNEs were, with limited exceptions, not defined with regard to technology. What adjustments, if any, should states make to recognize this more limited availability of UNE loops? Should the price of an entire copper loop be the same as the price of the portion of a hybrid fiber/copper loop that must be unbundled? In either case, how should prices for these loop elements be developed? How should the costs of fiber be allocated given the limited availability of hybrid fiber/copper loops? In addition, the Commission's new UNE loop rules limit the availability of fiber loops.<sup>87</sup> If a competitive LEC leases a copper loop that has been otherwise replaced by a fiber loop (and therefore depreciated fully), is a price based on forward-looking cost still appropriate? What adjustments should be made so that requesting carriers are not charged for operating costs, such as maintenance, associated with deployment of fiber networks to which they have limited access?

44. In addition to limiting unbundling requirements with respect to the local loop, the *Triennial Review Order* also limited unbundling obligations with respect to high-capacity loops, switching, and transport.<sup>88</sup> Specifically, under the new rules, high-capacity loops and transport elements might not be available in all geographic areas. Similarly, the switching element may not be available in all geographic areas or for all customer classes. How should states develop costs for UNEs that no longer are required to be provided throughout a carrier's service area (i.e., if the "total element" no longer is unbundled)? For example, does our finding that competitive LECs are not impaired without access to unbundled local circuit switching when serving the enterprise market change the manner in which unbundled switching costs should be developed? We encourage parties to identify other ways in which decisions in the *Triennial Review Order* should affect the Commission's UNE pricing rules.

### 3. Relationship to Universal Service

45. In the *Universal Service* proceeding, the Commission decided that funding should be based on the forward-looking cost of providing universal service.<sup>89</sup> The Commission identified criteria to guide the selection of a forward-looking universal service cost model.<sup>90</sup> It then applied these criteria in developing a computer cost model (the Synthesis Model) and selecting the inputs necessary to develop forward-looking costs.<sup>91</sup> Currently, the Commission

<sup>86</sup> *Local Competition Order*, 11 FCC Rcd at 15852, para. 695 ("Because the unbundled network elements correspond, to a great extent, to discrete network facilities, and have different operating characteristics, we expect that common costs should be smaller than the common costs associated with the long-run incremental cost of a service.").

<sup>87</sup> *Triennial Review Order* at paras. 273-84.

<sup>88</sup> *Id.* at paras. 201-02 (summarizing high capacity loop requirements), 419-28 (summarizing switching requirements), 359-60, 534 (summarizing transport requirements).

<sup>89</sup> *USF First Report and Order*, 12 FCC Rcd at 8776, 8888, 8889-90, 8903-17, paras. 199, 223-226, 232-251.

<sup>90</sup> *Id.*, 12 FCC Rcd at 8912-16, para. 250.

<sup>91</sup> *Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45, 97-160, Fifth Report and Order, 13 FCC Rcd 21323, 21335-62, paras. 26-92 (1998) (*USF Platform Order*); *USF Inputs Order*, 14 FCC Rcd at 20171-350, paras. 29-439.

uses the model to determine high-cost support for non-rural carriers based on a comparison of forward-looking costs among states.<sup>92</sup>

46. In developing the model and inputs necessary to calculate universal service funding, the Commission did not intend to provide any systematic guidance to states in the area of TELRIC rate-setting. Indeed, the Commission emphasized at the time that its decisions on particular inputs were made solely for the purpose of calculating universal service support and may not be appropriate for the calculation of UNE prices.<sup>93</sup> For these reasons, we continue to discourage states from using the nationwide inputs for the purpose of developing UNE prices.

47. In the absence of more specific guidance from the Commission, however, some state regulators have utilized our *USF Inputs Order* to reach conclusions regarding the TELRIC-based cost of building a network. Although we understand why state regulators might refer to the *USF Inputs Order* in developing forward-looking costs, in at least some cases there might be unintended and undesirable consequences that result from extrapolating from statements made in the context of universal service funding. For example, the Commission stated in the *USF Inputs Order* that it is necessary "to assume that the telephone industry will have at least the same opportunity to share the cost of building plant that existed when the plant was first built."<sup>94</sup> This statement was intended to address only the issue of structure sharing in the universal service model, but it has been interpreted by some states as endorsing a backward-looking approach for other inputs in a TELRIC model, such as the relative frequency of various construction types (e.g., boring through concrete, trenching through dirt).<sup>95</sup> Applying this particular statement from the *USF Inputs Order* out of context erroneously assumes away not just the features of an incumbent LEC's existing network but also attributes of the real world in which incumbents and competitors operate.

48. Our approach is not to single out these applications for special critique, but to suggest more broadly that imposing some real-world boundaries on the UNE cost inquiry is needed to ensure that appropriate pricing signals are sent to the market. The questions we ask in this proceeding are directed solely at our UNE pricing rules. In a number of places, however, we seek comment on the relevance of Commission statements in the universal service context for specific UNE pricing rules. We also invite parties to comment on the relationship between the

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<sup>92</sup> See *Qwest Corp. v FCC*, 258 F.3d 1191 (10<sup>th</sup> Cir. 2001) (affirming *USF Inputs Order* but remanding non-rural high-cost support methodology for further explanation). The Commission currently has in place for rural carriers an interim, five-year plan under which they receive support based on embedded costs. See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Fourteenth Report and Order, 16 FCC Rcd 11244 (2000).

<sup>93</sup> *USF Inputs Order*, 14 FCC Rcd at 20172, para. 32 ("The federal cost model was developed for the purpose of determining federal universal service support and it may not be appropriate to use nationwide values for other purposes, such as determining prices for unbundled network elements. We caution parties from making any claims in other proceedings based upon the input values we adopt in this Order.").

<sup>94</sup> *Id.* at 20261, para. 244 n.504

<sup>95</sup> Qwest TELRIC Letter at 9.

two sets of rules.<sup>96</sup>

## B. Network Assumptions

### 1. General Theory

49. Perhaps the most controversial aspect of the TELRIC rules is the assumption that the cost of a UNE should be calculated based on the cost of ubiquitous deployment of the most efficient technology currently available.<sup>97</sup> In implementing this requirement, current TELRIC models typically are designed to answer the following question: If a single carrier were to build an efficient network today to serve all customer locations within a particular geographic area, taking as given only the locations of existing wire centers, how much would it cost to construct and maintain the network?

50. One of the central internal tensions in the application of the TELRIC methodology is that it purports to replicate the conditions of a competitive market by assuming that the latest technology is deployed throughout the hypothetical network, while at the same time assuming that this hypothetical network benefits from the economies of scale associated with serving all of the lines in a study area. In the real world, however, even in extremely competitive markets, firms do not instantaneously replace all of their facilities with every improvement in technology.<sup>98</sup> Thus, even the most efficient carrier's network will reflect a mix of new and older technology at any given time.

51. Simultaneously assuming a market inhabited by multiple competitors and one with a ubiquitous carrier with a very large market share may work to reduce estimates of forward-looking costs below the costs that would actually be found even in an extremely competitive market.<sup>99</sup> It therefore may undermine the incentive for either competitive LECs or

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<sup>96</sup> However, we will not consider any changes to the model or inputs used in calculating universal service support in this proceeding.

<sup>97</sup> *Local Competition Order*, 11 FCC Rcd at 15848-49, para. 685; 47 C.F.R. § 51.505(b)(1).

<sup>98</sup> See, e.g., Dennis L. Weisman, *The (in)efficiency of the "efficient firm" cost standard*, Antitrust Bulletin (Spring 2000) ("If regulators had sufficient information to implement the efficient-firm cost standard, competition would be wholly unnecessary. In this respect, the efficient-firm cost standard is fatally flawed because it confuses mandating the competitive outcome with fostering the competitive process."); Kahn, Tardiff and Weisman, 11 Info. and Econ. Policy at 326 ("In a world of continuous technological progress, it would be irrational for firms constantly to update their facilities in order *completely* to incorporate today's lowest-cost technology.") (emphasis in original); *id.* at 322 ("[C]ompetitive prices will not tend, in a technologically dynamic industry, to be equated to the lowest cost of duplicating a service with the most recent technology."); but see David Gabel and David I. Rosenbaum, *Who's Taking Whom: Some Comments and Evidence on the Constitutionality of TELRIC*, 52 Fed. Comm. L. J. 239, 254 (2000) ("As regards the so-called 'hypothetical nature of the regulatory judgments' required for the implementation of the TELRIC methodology, it is uncertain as to whether the factual inquiry required for the conduct of a proper TELRIC study is any more hypothetical in nature than the judgments called for in determining whether or not capital costs, some of which were incurred decades ago, were 'prudently' made or 'used and useful.'").

<sup>99</sup> The clarifications we made to our TELRIC rules in the *Triennial Review Order* begin to address this concern. Specifically, by clarifying that a consistent set of assumptions is to be used for all the components of TELRIC (operating expenses, cost of capital, and depreciation) and that accelerated depreciation may be used to reflect the

incumbent LECs to build new facilities, even when it is efficient for them to do so.<sup>100</sup> We seek comment on this concern.

52. We tentatively conclude that our TELRIC rules should more closely account for the real-world attributes of the routing and topography of an incumbent's network in the development of forward-looking costs. We seek comment on whether such an approach would address claims that our TELRIC rules currently distort a competitor's decision whether to invest in new facilities or to lease an incumbent's existing facilities. Yet we also wish to ensure that a reformed TELRIC methodology does not swing in the other direction and give incumbents undue advantages. We seek comment on this tentative conclusion and, in particular, on how such an approach may differ from the practices of state commissions in UNE pricing proceedings.

53. We seek comment on proposals that would achieve these objectives. We seek comment on whether it is appropriate to assume that the cost of an existing element is the cost of that element if it were being replaced today. Under this approach, the cost to the incumbent LEC of using its existing facilities is the cost that would actually be incurred (including actual placement costs) to place new facilities in the same location. As discussed above, the UNE pricing methodology, while forward-looking, must be representative of the real world and should not be based on the totally hypothetical cost of a most-efficient provider building a network from scratch. To that end, the UNE cost study should be based upon the incumbent LEC's actual network topography and currently available, forward-looking technologies.

54. Alternatively, we seek comment on whether we should define the relevant network as one that incorporates upgrades planned by the incumbent LEC over some objective time horizon (e.g., three or five years), as documented, for example, in an incumbent LEC's actual engineering plans. Although this approach would take as given whatever existing facilities will remain in the network at the end of the designated period, it also should capture technological evolution within that period. Such an approach may provide an appropriate middle ground between the hypothetical assumptions required under our current rules and the replacement cost approach described in the previous paragraph. Finally, we seek comment on any other alternatives that would ground our TELRIC rules in the attributes of an incumbent's existing network. We ask parties to comment on whether any or all of these approaches would produce results that are more consistent across states and send better entry and investment signals to incumbents and competitors.

55. In the *Local Competition Order*, the Commission defined the term "long run" to

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anticipated decline in value of assets over their useful life, we have provided state commissions additional guidance that should help to avoid unreasonable rates that might be caused by inconsistent assumptions.

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<sup>100</sup> See, e.g., Thomas M. Jorde, J. Gregory Sidak and David J. Teece, *Innovation, Investment and Unbundling*, 17 Yale J. Reg. 1 (Winter 2000) ("[M]andatory unbundling confers a second-mover advantage and substantially decreases a CLEC's incentives to make a sunk investment."); Sidak and Spulber, 97 Columbia L. Rev. 1081 ("If the incumbent LEC, the putative owner of the local network, no longer can recover the costs of investments that it would make on a forward-looking basis – let alone keep any economic rents accruing to such investments – then entrants become free riders and the incumbent LEC's incentive to make further investment in the local exchange network evaporates."); but see Gabel and Rosenbaum, 52 Fed. Comm. L. J. at 264-65.

mean a period long enough for all of a firm's costs to become variable or avoidable.<sup>101</sup> Does our tentative conclusion compel us to shift from a long-run average cost methodology to a short-run average cost methodology? If so, what are the consequences of such a shift? To the extent the cost of a UNE under such an approach would in part be based on the existing incumbent LEC network, is such an approach consistent with the "heavy presumption" against the use of embedded costs?<sup>102</sup> Would it be more effective to retain a long-run pricing methodology, but provide specific guidance to the states on the appropriate long-run assumptions upon which to base network inputs?

56. We ask parties to suggest other ways of defining the network that is to be modeled in a UNE pricing proceeding. To what extent should network assumptions reflect evidence of the network decisions made by competitive LECs? Parties should explain in detail the network assumptions they advocate and the competitive assumptions implicit in their proposals. Parties also should explain whether they are proposing a theory based on short-run costs or long-run costs, and how their proposed definition of the network will produce more accurate economic signals and more consistent results than our current regime.

57. The dispute as to the relevant network for pricing purposes is in large part a dispute over what constitutes efficiency. Is our current approach of looking at efficiency at a single point in time consistent with the longer time horizon, and corresponding uncertainties, that carriers actually consider when deciding to invest in long-lived assets that are expensive, if not impossible, to redeploy? What is the efficiency standard that the Commission should use in order to achieve UNE prices that send the correct economic signals regarding investment, while still achieving the necessary level of cost recovery? To what extent is the efficiency standard related to assumptions about the state of competition? For example, the requirement in the current rules to assume the most efficient technology currently available is based on the assumption that competitors would deploy the most efficient technology on a widespread basis, thereby constraining the value of the incumbent LEC network. We ask parties to be very specific in defining the standard of efficiency and explaining how to determine whether a network is optimized for economic efficiency.

58. A central principle of the current UNE pricing rules is that competitive LECs should not pay UNE rates that compensate incumbent LECs for past inefficiencies.<sup>103</sup> We ask parties to comment on whether there is any reason to depart from this principle. One of the reasons that the Commission moved from rate-of-return regulation to price cap regulation of some carriers was to create a strong incentive for carriers to operate as efficiently as possible. Given that most large incumbent LECs have been subject to forms of price cap regulation at the state level for some time and at the federal level since 1991, is there reason for the Commission

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<sup>101</sup> *Local Competition Order*, 11 FCC Rcd at 15845, para. 677; see also *USF First Report and Order*, 12 FCC Rcd at 8913, para. 250(3).

<sup>102</sup> *Verizon v. FCC*, 535 U.S. at 512.

<sup>103</sup> *Id.* at 511-12.

to find that an incumbent LEC's practices presumptively are efficient?<sup>104</sup> Why or why not? We ask incumbent LECs to comment on what portion of their networks were installed since the onset of price cap regulation. What would be the effect of a presumption of efficiency on a state commission's pricing proceeding? What type of evidence would be sufficient to rebut this presumption? How difficult would it be for competitive LECs to develop such evidence? What effect should any asymmetry in access to information about incumbent LECs' practices and their costs have on any presumptions we may create? If we modify our network assumptions to track more closely the incumbent LEC's existing network, how will CLECs that purchase UNEs receive the benefit of efficiency gains that should be occurring in the network? Is the adoption of some sort of productivity factor a necessary part of any transition to network assumptions that rely on the existing network?

59. Parties that propose changing our network assumptions should explain whether assuming a different network than under the current rules would lead to higher UNE prices. Will that create more situations in which a competitive LEC will choose to build its own facilities, rather than lease from the incumbent LEC? What is the consequence of such an approach in situations where it is not economically feasible for a competitive LEC to build its own facilities? In assessing the potential impact on UNE rates of a change in network assumptions, we note that any move away from the Commission's current assumptions about competition and technology affects other aspects of the rate calculation. For example, the cost of capital might be lower under a regime that looked at an incumbent LEC's existing network, rather than the "most efficient" network available today, because keeping existing facilities might be less risky than investing in new facilities.<sup>105</sup> We ask parties that favor a change in network assumptions to identify how such a change would affect each component of the pricing rules (e.g., operating expenses, cost of capital, depreciation).

60. We ask parties to discuss whether a regime focused more closely on the existing network of an incumbent LEC would be easier for state commissions to implement than the current TELRIC regime. The results produced under the current TELRIC rules depend in large part on the assumptions made by the regulator with respect to the level of competition and the spread of new technology. Even if the current approach is correct as a matter of economic theory, the resulting decisions are predictive, and reliance on these assumptions may increase the likelihood of error. Would an approach based on real-world attributes of an incumbent LEC's network eliminate much of the speculation that now takes place within the context of a UNE pricing proceeding? Are there benefits to a "scorched node" approach that outweigh the potential for error? For example, we note that any move toward a version of forward-looking cost that places greater reliance on the attributes of an incumbent LEC's existing network raises issues of transparency and verifiability. Unlike most ratesetting regimes that rely on contested proceedings, the Commission's TELRIC rules put the parties to a pricing dispute on relatively

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<sup>104</sup> As noted by the Supreme Court, the "price-cap scheme starts with rates generated by the conventional cost-of-service formula." *Id.* at 487. The court also stated that "price caps do not eliminate gamesmanship," but "they do give companies an incentive to 'improve productivity to the maximum extent possible.'" *Id.* (quoting *Policy and Rules Concerning Rates for Dominant Carriers*, CC Docket No. 87-313, Second Report and Order, 5 FCC Rcd 6786, 6787-88, paras. 7-9 (1990)).

<sup>105</sup> *Triennial Review Order* at paras. 680-82.

equal footing because information on the current cost of current technology is not solely under the control of the incumbent LEC.<sup>106</sup> In contrast, an approach that relies more heavily on information regarding the incumbent's existing network or planned upgrades could give the incumbent a significant advantage in a rate proceeding. We seek comment on whether focusing the cost inquiry on an incumbent's existing network might place competitive LECs at an informational disadvantage in litigating any factual issues about which the incumbent LEC, as owner of that network, may have better information.

61. We welcome proposals for concrete procedural safeguards designed to minimize risks of an informational imbalance resulting from the methodological reforms discussed in this NPRM. For example, states might require that the parties engage in a limited discovery period before submitting their cost proposals, to ensure that both the incumbents and competitors are working from the same data. At the same time, we seek comment on ways in which UNE pricing proceedings, which often last for years under our current rules, can be streamlined without placing any party at a material informational disadvantage. For example, can and should we provide guidance to the states as to the appropriate topics of discovery for particular categories of cost disputes? Can and should we obviate the need for excessive discovery by identifying, whenever possible, objective sources of inputs to be used in calculating TELRIC rates? If so, what should those sources be? Are there other procedural requirements that we could establish that might facilitate resolution of UNE pricing proceedings?

## **2. Specific Network Inputs**

62. In addition to our tentative conclusion that a forward-looking pricing methodology should more closely account for the real-world attributes of the routing and topography of an incumbent LEC's network, we believe there are a number of aspects of the current "efficient network" assumption that might benefit from clarification or modification. We discuss some of these issues below, and we encourage parties to identify additional steps we might take to produce prices that satisfy the objectives that we have identified.

### **a. Network Routing and Construction**

63. To establish prices based on forward-looking costs, states must make assumptions about how a network will be routed and what construction techniques will be used in building it. We seek comment on the network routing assumptions that would be consistent with our tentative conclusion that prices should account for the real-world attributes of the routing and topography of an incumbent LEC's network. Specifically, how critical are the locations of existing rights-of-way, existing poles, and existing conduit (all of which are located on existing roads and routed around existing natural obstacles) for all wireline carriers (incumbents and new entrants) when new facilities are built? Is there any theoretical basis for an approach that does not assume the existence of existing roads, buildings, and natural obstacles?

64. Regardless of whether we adopt our tentative conclusion, should we modify the "scorched node" theory and adopt routing assumptions more closely tied to an incumbent LEC's

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<sup>106</sup> See *Verizon v. FCC*, 535 U.S. at 522.



existing network? One approach, for example, might be to extend the assumption of existing switch locations to other parts of the network (e.g., existing feeder routes, existing remote terminal locations). Another approach might be to require that states assume that the network is built along existing rights-of-way, and that those rights-of-way are in their current condition (e.g., paved or unpaved). Parties supporting this approach should explain how states can best determine current right-of-way routes, whether a standard based on existing rights-of-way provides parties other than the incumbent LEC an opportunity to participate effectively, and how such routes can be compared to the routes of incumbent LECs and the routes generated by computer cost models.

65. We seek comment on other principles we could apply in deciding on the appropriate network routing and construction techniques for costing purposes. Parties should explain how their proposed network principles reflect the variables that incumbent and competitive LECs consider in making routing and construction decisions. To the extent parties propose principles based on the real-world attributes of an incumbent LEC's existing network, they should explain in detail how a state commission would establish the forward-looking cost of an existing network, and how such a costing approach differs from "rate-of-return or other rate-based" methodologies that are prohibited under section 252(d)(1). We note that, in the *USF Platform Order*, the Commission declined to verify the Synthesis Model's outside plant design parameters by comparing them to incumbent LEC outside plant on the ground that incumbent LEC networks "may not represent the least-cost, most-efficient design in some cases."<sup>107</sup> We invite parties to discuss the applicability of this conclusion, if any, in the context of UNE pricing.

66. Under our current TELRIC rules, the rates established in a state pricing proceeding depend significantly on the computer cost model adopted by the state commission. We ask parties to comment on whether, and how, our tentative conclusion to account more closely for the real-world routing and topography of an incumbent's network would affect the ability of carriers to use computer cost models. Is it more difficult to model an existing network than a hypothetical one? We invite state commissions to comment on whether they have adopted cost models that are capable of reflecting existing network routing.

#### **b. Technology**

67. Our current rules require states to assume that the "most efficient telecommunications technology currently available" is used throughout the network.<sup>108</sup> The Commission concluded in the *Local Competition Order* that the forward-looking pricing methodology for interconnection and UNEs should be based on a "reconstructed local network [that] will employ the most efficient technology for reasonably foreseeable capacity requirements."<sup>109</sup> At the same time, the Commission recognized a need for "basing prices on

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<sup>107</sup> *USF Platform Order*, 13 FCC Rcd at 21349-50, para. 66.

<sup>108</sup> 47 C.F.R. § 51.505(b)(1).

<sup>109</sup> *Local Competition Order*, 11 FCC Rcd at 15848-49, para. 685.

efficient, new technology that is compatible with the existing infrastructure.”<sup>110</sup>

68. As noted above, it is unlikely that any carrier, no matter how competitive the marketplace, would deploy new technology instantaneously and ubiquitously throughout its network. Even if the objective is to replicate the results of a competitive market, an approach that reconstructs the network over time seems to be more appropriate than one that assumes the instantaneous deployment of 100 percent new technology.

69. We seek comment on how our tentative conclusion above affects the technology assumptions used to develop UNE prices. Of what relevance is the Commission’s statement in the universal service context that “[e]xisting incumbent LEC plant is not likely to reflect forward-looking technology or design choices”?<sup>111</sup> How should a state commission determine the price for equipment in the incumbent LEC network that no longer is widely used in the industry, such as analog switches or older versions of digital loops carrier systems? How does an approach that replicates an incumbent LEC’s existing technology compare to a “reproduction cost” methodology?<sup>112</sup>

70. We encourage parties to identify the specific factors that influence their decisions with respect to how quickly to deploy new technology. How, if at all, should we factor in the uncertainty associated with the timing and efficiency of new technology? Of what relevance, if any, is the pace at which incumbent LECs have deployed new technologies in the past (e.g., digital switches)? If our goal is to replicate the results of a competitive market, is there evidence as to the diffusion rates of new technology in competitive markets as opposed to monopoly markets that might inform our analysis?<sup>113</sup>

### c. Structure Sharing

71. “Structure sharing” refers to how much of the cost of installing poles, digging trenches, and placing conduit would be shared on a forward-looking basis by the incumbent LEC with other entities, such as power companies, cable operators, or other telecommunications carriers. The more sharing that is assumed, the lower the cost to the incumbent LEC of

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<sup>110</sup> *Id.*

<sup>111</sup> *USF Platform Order*, 13 FCC Rcd at 21336, para. 30.

<sup>112</sup> Under a reproduction cost methodology, the regulator takes the incumbent’s existing network as given and then estimates what it would cost to replace the existing network with new facilities that are identical to the existing facilities. See, e.g., KAHN at 109-116. Thus, if the existing network contained an analog switch, under the reproduction cost approach, the regulator would try to determine what it would cost today to purchase a brand new analog switch. This approach generally has been discredited. As Justice Brandeis recognized nearly eighty years ago, “[i]f the aim were to ascertain the value (in its ordinary sense) of the utility property, the enquiry would be, not what it would cost to reproduce identical property, but what it would cost to establish a plant which could render the service, or in other words, at what cost could an equally efficient substitute be then produced.” *Missouri ex rel S W. Bell Tel. Co. v Public Serv. Comm’n*, 262 U.S. 276, 312 (1923) (Brandeis, J. dissenting).

<sup>113</sup> See, e.g., Shelanski, *Competition and Deployment of New Technology in U.S. Telecommunications*, 2000 U. Chi. Legal F. 85, 115 (“When deployment times and market structures are matched, faster deployment times correlate with more competitive markets. . . . [A]verage deployment times speed up as markets become more competitive”).

providing the element. The *Local Competition Order* provides no guidance on this practical issue.<sup>114</sup> Structure sharing has been a consistently difficult issue for state commissions to resolve, particularly with respect to buried and underground plant.<sup>115</sup> The difficulty arises from confusion over the appropriate assumptions to make about construction by entities other than the incumbent LEC under TELRIC's "scorched node" construct.

72. We ask parties to offer suggestions on how the Commission might provide guidance to state commissions on the method for establishing structure sharing percentages, particularly in light of our tentative conclusion that the pricing methodology should account for real-world attributes of the routing and topography of an incumbent LEC's network. Is it appropriate to consider sharing opportunities that were available at the time the plant was built, as the Commission suggested in the *USF Inputs Order*?<sup>116</sup> How relevant are an incumbent LEC's actual sharing percentages? Are they dispositive? If the incumbent LEC's actual data are not dispositive, what other sources of data should be used in developing structure sharing inputs? Are there factors that either encourage or discourage parties from sharing construction costs today (e.g., municipal ordinances requiring joint construction)? If so, how should these factors be reflected in the sharing percentages used to calculate UNE prices? Parties should provide empirical data with respect to their experiences sharing construction costs with other entities.

#### d. Fill Factors

73. A fill factor represents the percentage of the capacity of a particular facility or piece of equipment that is used on average over its life. Increasing fill factors has the effect of lowering costs by reducing the amount of spare capacity that must be allocated to working units. For example, if the investment in loop plant is \$1 million and there are 1000 total loops, the investment per working loop would be \$2000 if the fill factor were 50 percent, but only \$1429 per loop with a 70 percent fill factor. The *Local Competition Order* provides no guidance to state commissions on this specific issue beyond the general requirement that the network should be sized to meet reasonably foreseeable demand.<sup>117</sup> In the *USF Inputs Order*, the Commission

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<sup>114</sup> The Commission addressed the issue of structure sharing percentages in the universal service proceeding. It adopted percentages that varied by type of structure (aerial, buried, or underground) and line density. Parties generally agreed that sharing occurs more frequently with aerial structure and in higher density zones, although they disagreed on the extent of sharing. The Commission explained that its determination of structure sharing percentages requires a degree of predictive judgment. It stated that "a forward-looking mechanism must estimate the structure sharing opportunities available to a carrier operating in the most-efficient manner," and that "the forward-looking practice of a carrier does not necessarily equate to the historical practice of the carrier." *USF Inputs Order*, 14 FCC Rcd at 20262, para. 247. Parties in that proceeding did not submit accurate and verifiable data with respect to existing sharing percentages, but even if they had the Commission said that it would have needed to decide whether or not those existing percentages were appropriate starting points for determining input values. *Id.* at 20262, para. 245. Given the divergence of opinion on the extent of structure sharing opportunities in the future, the Commission expressly anticipated revisiting this issue at a later date. *Id.*

<sup>115</sup> Sharing of pole space among utilities is a well-established practice that has been subject to regulation under section 224 since before the 1996 Act.

<sup>116</sup> *USF Inputs Order*, 14 FCC Rcd at 20261, para. 244 n.504.

<sup>117</sup> *Local Competition Order*, 11 FCC Rcd at 15847, para. 682. We note that competitive LECs raised issues related to fill factors in limited instances during section 271 proceedings before the Commission. In one case, the

established forward-looking fill factors based on current demand, which it defined to include excess capacity for short-term growth, rather than on ultimate demand, which it found to be too speculative.<sup>118</sup>

74. We seek comment on appropriate guidelines for states to follow in establishing fill factors. What factors do states currently consider in developing fill factors? How relevant are an incumbent LEC's existing fill factors in establishing forward-looking costs? Should they be dispositive given our tentative conclusion to more closely account for the real-world attributes of the routing and topography of an incumbent LEC's network? If an incumbent LEC's existing fill factors are not dispositive, what other evidence should a state commission consider? Would it be relevant if competitors routinely operated facilities at a higher or lower fill? Should state commissions consider "carrier of last resort" obligations in deciding on the appropriate fill factor? Would the fill factors of other incumbent LECs be relevant to demonstrate achievable efficiencies?

75. Would we expect carriers to operate at higher or lower fill factors as the level of facilities-based competition increases in a market? Is there empirical evidence that distinguishes between the fill factors that carriers experience in competitive markets and monopoly markets? Would carriers in competitive markets be expected to reduce prices in order to increase fill? How are fill factors likely to vary as the rate of demand growth varies? Finally, we seek comment on methods for quantifying dynamically efficient fill factors on a forward-looking basis.

#### e. Switch Discounts

76. An issue that has arisen in numerous section 271 proceedings is whether to base unbundled switching prices on payments that the incumbent LEC makes to the vendor for: (1) an entirely new (or replacement) switch; (2) growth equipment, such as line or trunk termination equipment, added to the existing switch to increase capacity and satisfy growing demand; (3) technology upgrades to existing equipment, such as the processor, to increase speed and capacity that make new features and services possible; or (4) some combination of these. This issue arises because switch manufacturers typically offer a relatively large price discount for an entirely new switch and a smaller discount on growth or upgrade equipment added to an existing switch.

77. The Commission has found that state commissions in setting UNE rates "may take into account that there will be growth in a network in the future and that it may not be cost-effective to acquire all of the projected switching capacity needed over the life of the switch at

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Commission concluded that a fill factor of 30 percent for distribution cable in Oklahoma was too low and violated TELRIC principles because it assumed that too much of the capacity would be idle for an indefinite time, contrary to TELRIC's presumption of an efficient network. *SWBT Kansas/Oklahoma 271 Order*, 16 FCC Rcd at 6275-76, para. 80.

<sup>118</sup> *USF Inputs Order*, 14 FCC Rcd at 20243-44, para. 199 ("[T]he fact that the industry may build distribution plant sufficient to meet demand for ten or twenty years does not necessarily suggest that these costs should be supported by the federal universal service support mechanism.").

the outset.”<sup>119</sup> The Commission, therefore, has rejected an assumption that the appropriate switching discount for TELRIC pricing purposes must be based on a purchase of 100 percent new switches.<sup>120</sup> The Commission recognized that certain vendors provide a greater discount for new switches and a smaller discount for growth additions, and that the large initial discount is available only when an overall purchase of both new and growth equipment is planned. Cost models may in a forward-looking manner take into account specific new and growth discounts that carriers receive in contracts with vendors and, accordingly, may reflect a reasonable combination of new and growth switch deployment.<sup>121</sup>

78. Because switching equipment has a high degree of modularity, carriers over time grow their switches and upgrade them with new technology as it evolves on the premise that this is a better way to minimize costs than purchasing a switch large enough to satisfy anticipated demand over the entire life of the switch. We seek comment on whether unbundled switching costs should be based on the prices that an efficient incumbent LEC or other entrant would pay for switching equipment over the life of the switch and not at a particular point in the switch’s life cycle, *e.g.*, not at the beginning of the life cycle when the carrier is paying vendors for a new switch, nor at the end of the switch’s life when a carrier is paying vendors primarily for growth additions or technology upgrades to the switch. In addressing this question, parties also should explain what assumptions they make with respect to line demand and technology improvements. Is it reasonable to assume that switched access line demand will grow? Is it reasonable to assume continued improvement in switching technology? What assumptions have state commissions made with respect to vendor discounts? Parties also should explain their assumptions regarding vendor pricing strategies, and the basis for those assumptions.

79. The basic formula for developing a price for an element is to divide total cost by total demand. In the case of switching, does the total cost consist of a new switch reflecting a relatively large vendor discount plus growth and upgrade equipment reflecting relatively small discounts? Should this cost then be spread over total demand consisting of all the lines served by the new, growth, and upgraded equipment over the switch’s life? We ask for comment on the use of this principle in developing a price that is based on costs of equipment installed in increments over the life of the switch. Parties also should explain whether, and how, these calculations should account for the time value of money. Should the future costs associated with growth and upgrade equipment be discounted to their present value? Should the same treatment apply to additional future demand associated with that equipment? Is the appropriate discount

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<sup>119</sup> *Application by Verizon New Jersey Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance) NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks Inc., and Verizon Select Services Inc., for Authorization to Provide In-Region, InterLATA Services in New Jersey*, WC Docket No. 02-67, Memorandum Opinion and Order, 17 FCC Rcd 12275, 12293, para. 43 (2002) (*Verizon New Jersey 271 Order*).

<sup>120</sup> *Verizon New Jersey 271 Order*, 17 FCC Rcd at 12293, para. 43.

<sup>121</sup> *Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in Georgia and Louisiana*, CC Docket No. 02-35, Memorandum Opinion and Order, 17 FCC Rcd 9018, 9059-60, para. 82 (2002). Similarly, although we recognize that an efficient competitor might anticipate some growth additions over the long run, the Commission has found that rates based on an assumption of 100 percent growth additions and no new switches do not comply with TELRIC principles. *Verizon Rhode Island 271 Order*, 17 FCC Rcd at 3318, para. 34.

rate the cost of capital used in calculating UNE prices generally?

80. Assuming that unbundled switching prices should reflect vendor prices for switch equipment that is installed in increments over the life of the switch (not the price that the carrier pays for equipment at any one point in the life cycle of the switch), we seek comment on whether the starting point for calculating costs should be a new switch that is installed today. We also seek comment on whether unbundled switching prices should reflect, in addition to costs for the initial switch equipment, costs of growth additions and technology upgrades, growth additions alone, or upgrades alone for the years following the initial installation. Commenters that believe current prices should recover costs of future upgrades should explain why current competitive LECs should pay for benefits that they do not yet receive. In light of our conclusion that UNE pricing should continue to be based on a forward-looking methodology, we ask commenters to describe in detail any rationale for supporting or rejecting UNE prices based on vendor prices that incumbent LECs currently pay for equipment they are installing today in existing switches, *i.e.*, vendor prices for growth additions and technology upgrades made at a particular point in the life cycle of an existing switch.

81. We ask parties to explain in detail the methodology that should be used to develop total cost and total demand under this approach. We also invite parties to submit studies showing how to develop an unbundled switching price. These studies should assume that service is provided using modern digital switches that are installed today. We ask that commenters develop this price for either an incumbent LEC's study area or a UNE zone within a study area. One study should develop the costs of initial new equipment and all future growth equipment that is expected to be installed periodically over the life of the switch. A second study should develop costs for these two components plus costs of all future technology upgrade equipment that is expected to be installed periodically over the life of the switch. Parties should explain and fully document the methodology, assumptions, and data they use to estimate these costs and the demand over which these costs are spread.<sup>122</sup> If a commenter believes UNE prices should be based on a switch technology other than digital technology, that party may submit other studies in addition to, rather than in place of, the studies requested above.

### C. Cost of Capital

82. In the *Local Competition Order*, the Commission stated that the "currently authorized rate of return at the federal or state level is a reasonable starting point" in determining the cost of capital and that incumbent LECs "bear the burden of demonstrating with specificity that the business risks that they face providing unbundled network elements and interconnection

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<sup>122</sup> At a minimum, commenters should document the following assumptions: (1) switched access line annual rate of growth, (2) switched access minutes of use annual rate of growth, (3) annual rate of growth of busy hour minutes of use per switched access line, (4) how frequently growth equipment is added to the switch to satisfy growing demand, *e.g.*, yearly, every two years, etc., (5) how frequently technology upgrade equipment is added, (6) expected useful life of a switch installed today, (7) cost of capital used to calculate the present value of all current and future costs and all current and future demand, and (8) how frequently the central processor, switch memory and other "getting started" equipment are entirely replaced with new equipment, or augmented by adding equipment, to increase capacity for satisfying growing demand or providing advanced features and services. The getting started cost of the switch, also known as the "first cost," is for the central processor, memory, maintenance, administrative, test, spare and other common equipment.